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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/828,637	04/20/2004	Charles Lynn Chidester	14374.54	5324

7590 04/05/2006
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EXAMINER

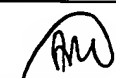
SUCHECKI, KRISTYNA

ART UNIT	PAPER NUMBER
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2882

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/828,637	Applicant(s) CHIDESTER, CHARLES LYNN	
	Examiner Krystyna Suchecki	Art Unit 2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03/01/06.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-11, 15-17, 25 and 30-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3-10, 25 and 30-32 is/are allowed.
- 6) ☒ Claim(s) 11, 17 and 33 is/are rejected.
- 7) ☒ Claim(s) 15 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 17 is rejected under 35 U.S.C. 102(b) as being anticipated by Christine (FR 2699326 A).

Regarding claim 17, Chrisitne teaches, in an x-ray tube having a filament of predetermined longitudinal length, a method for producing an electron stream having a predetermined electron density profile, the method comprising applying a predetermined electric current to the filament so as to cause emission of electrons by the filament (Page 5, lines 8-22); varying, with respect to the longitudinal length of the filament, the rate at which electrons are emitted by the filament, the varying of the rate at which electrons are emitted by the filament being implemented by performing heating the filament in such a way that some portions of the filament are at a relatively higher temperature than other portions of the filament (*Id.*); and accelerating at least some of the emitted electrons toward a focal spot located at a predetermined distance from the filament (Page 1, lines 6-21).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christine in view of Lu (US 5,623,530).

Regarding Claim 11, Christine teaches a cathode assembly suitable for use in an x-ray device, the cathode assembly comprising a metal concentrator (Page 3, lines 16-23) and a filament taking the form of a helically wound wire whose pitch varies along a longitudinal axis defined by the filament, the variances in pitch being substantially symmetrically arranged with respect to a predetermined location on the longitudinal axis (Figure 2; Page 3, lines 12-34; Page 5, lines 8-22). The assembly can have multiple focus points by the use of multiple filaments aimed at portions of an anode (Figure 4b).

Christine is silent as to the manner of mounting the cathode assembly, so that Christine does not teach a base portion or cathode cup attached to the base portion, the cathode cup including at least two walls which cooperate to at least partially define a slot with the filament disposed substantially within the slot.

Lu teaches a standard method of mounting cathode assemblies that can accommodate multiple filaments for aiming at and anode to create multiple x-ray emission profiles (Figure 3). The mounting has a base portion (64) and a cathode cup (62) attached to the base portion, the cathode cup including at least two walls which cooperate to at least partially define a slot with the filament disposed substantially within the slot (Column 3, line 56- Column 4, line 15). The cup and slot cooperate to provide a secure ability to correctly place the filament to provide the desired focal spot (*Id.*)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the mounting assembly of Lu with the assembly of Christine in order to provide secure and correct placement of Christine's filament as taught by Lu to provide the desired focal spot (Lu, Column 3, line 56- Column 4, line 15).

Regarding Claim 33, Christine additionally teaches that the predetermined location comprises a location proximate a center of the filament (Page 3, lines 12-34).

Response to Arguments

Applicant's arguments with respect to claims 11 and 17 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

Claims 3-10, 25 and 30-32 are allowed.

Claims 15 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Claims 3 and 25 contain allowable subject matter for at least the reasons indicated in the Office action dated 11/01/05. Claims 4-10 and 30-32 contain allowable subject matter at least by virtue of their dependency.

Claims 15 and 16 contain allowable subject matter for at least the reason that the prior art of record fails to teach or reasonably suggest a cathode assembly having a filament having the form of a helically wound wire with symmetrical variations with

respect to a predetermined location on a longitudinal axis, the variation being in one of a diameter along a longitudinal axis, a pitch along a longitudinal axis, or a diameter that varies along a longitudinal axis defined by the filament, the filament being within a slot defined by walls of a cathode cup, the slot at least partially defined by the walls of the cathode cup having a cross sectional area that varies along at least a portion of a length of the slot. Such a modification to Lu is not obvious in view of the remedies of Christine. Christine ensures a certain cross-sectional profile of a beam emitted by the filament, and does not rely on variations in materials external to the filament. Hosokawa fails to teach symmetrical variations with respect to a predetermined location on a longitudinal axis of the filament.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krystyna Suchecki whose telephone number is (571) 272-2495. The examiner can normally be reached on M-F, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KS

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EDWARD J. GLICK
SUPERVISORY PATENT EXAMINER